

Purchase Order Receipt Listing

Friday, January 13, 2017 10:21:35 AM

All Vendors PO ID PO34793 All Receipt Dates All Line Item Types
 All Item ID/GL/WOS All Rec. Employees All Currencies
 Grouped by Vendor ID

All amounts are calculated in domestic currency.

Page 1 of 2

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
PO34793	1 USD	VU-TWM001	TW Metals	M304/TR0.500W.035 f 304 RD Tube .500 x f .035W m136569	1/12/2017 24.0000	1/11/2017 PLOU01	20.0000	0.0000	0	\$0.00	
	2 No			M304/TR0.500W.049 f 304 RD Tube .500 x f .049W m136569	1/12/2017 84.0000	1/11/2017 PLOU01	80.0000	0.0000	0	\$0.00	
	3 No	M4130NT0.750W.04 f 9 x.049W m136569		M4130NT0.750W.04 f 4130 RD Tube .750 f x.049W m136569	1/12/2017 20.0000	1/11/2017 PLOU01	23.9170	0.0000	0	\$0.00	
	4 No			M4130NT0.750W.08 f 3 4130 RD Tube .750 f x.083W m136569	1/12/2017 20.0000	1/11/2017 PLOU01	19.5830	0.0000	0	\$0.00	
	5 No			M4130NT1.000W.12 f 0 4130 RD Tube 1.00 x f .120wall m136569	1/12/2017 20.0000	1/11/2017 PLOU01	24.0000	0.0000	0	\$0.00	
	6 No			M6061T6T1.000W06 f 5 6061T6 RD TUBE f 1.00 x .065W m136569	1/12/2017 20.0000	1/11/2017 PLOU01	24.0000	0.0000	0	\$0.00	
	7 No			71401-45 PROCUREMENT QUALITY CLAUSES m136569	1/12/2017 1.0000	1/11/2017 PLOU01	1.0000	0.0000	0	\$0.00	

Purchase Order ID/ Curr Type	Line Nbr/ Insp	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date/ Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt

Total Received Quantity: 192.5000
 Total Qty to Inspect (PO U/M): 0.0000
 Total Reject Quantity: 0.0000
 Total Receipt Value: \$0.00
 Total Balance Due Quantity: 0.0000



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 60622788 FROM: CRAN PAGE 1

CUST NUMBER: 1203820 NET WGT: 75.170 REQ. DATE: 01/12/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKSBURY ON
CANADA CN K6A 1K7
ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 01/06/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO34793 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0001 36449 SMLS CD 304/L A269 1/2 OD X .035 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.000 FT	✓ 20.000 FT	3.475

PCS
1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49348005 HT: YX1511521 PC: 1 CUSTOMER QTY: 20.000 UOM FT
MLT: CHINA MFG: CHINA SLB/CL: 7-64

0002 36506 SMLS CD 304/L A269 1/2 OD X .049 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	80.000 FT	80.000 FT	✓ 80.000 FT	18.874

PCS
4

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49339077 HT: YX1506712 PC: 4 CUSTOMER QTY: 80.000 UOM FT
MLT: CHINA MFG: CHINA SLB/CL: 9-116

0003 33047 CDS 4130 6736 3/4 X .049

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	23.917 FT	✓ 23.917 FT	8.771

PCS
1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
PO: 49353474 HT: 598618 PC: 1 CUSTOMER QTY: 23.917 UOM FT
MLT: GERMANY MFG: GERMANY SLB/CL: 1625993

SP/1-01-11

1
THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 60622788 FROM: CRAN PAGE 2

CUST NUMBER: 1203820 NET WGT: 75.170 REQ. DATE: 01/12/17 CONFIRMED
 SOLD TO: DART AEROSPACE LTD
 1270 ABERDEEN ST
 HAWKESBURY ON
 CANADA CN K6A 1K7
 SHIP TO: DART AEROSPACE LTD
 1270 ABERDEEN ST
 HAWKESBURY ON
 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY
 TERMS: NET 30 DAYS
 F.O.B.: SHIPPING POINT
 CUST ORD NO.: PO34793
 SHIP BY: 01/06/17
 VIA: COMMON CARRIER
 FREIGHT: PREPAID
 RELEASE NO.:
 RECEIVING PHONE:

LINE ITEM DESCRIPTION
 0004 33096 SMLS CD 4130 6736 3/4 OD X .083 WA WIDTH LENGTH
 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	19.583 FT	19.583 FT	11.578

PCS
1

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
 PO: 49316335 HT: 587359 PC: 1 CUSTOMER QTY: 19.583 UOM FT
 MLT: GERMANY MFG: GERMANY SLB/CL: 1600427

0005 33364 SMLS CD 4130 RD 6736 1 X .120 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	24.000 FT	24.000 FT	27.072

PCS
1

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
 PO: 49354259 HT: MM16101444 PC: 1 CUSTOMER QTY: 24.000 UOM FT
 MLT: UNITED STATES MFG: UNITED STATES SLB/CL: 143275

0006 43284 D6061-T6 1 OD X .065 WA

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	24.000 FT	24.000 FT	5.400

PCS
2

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
 PO: 49295465 HT: 17800951 PC: 1 CUSTOMER QTY: 12.000 UOM FT
 MLT: MFG: UNITED STATES SLB/CL: 1000333483
 PO: 49321087 HT: F001758730001 PC: 1 CUSTOMER QTY: 12.000 UOM FT
 MLT: UNITED STATES MFG: UNITED STATES SLB/CL: 672356

SPF-OH

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O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 60622788 FROM: CRAN PAGE 3

CUST NUMBER: 1203820 NET WGT: 75.170 REQ. DATE: 01/12/17 CONFIRMED
SOLD TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA CN K6A 1K7 SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 01/06/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO34793 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH

BROKERS KUEHNE AND NAGEL LTD

		PACK INFO					
AREA	TYPE OF PKG	PKGS	GRS	WEIGHT	WIDTH	LENGTH	HGHT
B	DOUBLE CARTON	1.000		83.000			24.5000

1.000 83.000

UNLOAD TYPE: NONE SPECIFIED

BY: WN
RT 000-

DATE SHIPPED _____

DATE FILLED _____

THANK YOU FOR THIS ORDER

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REVIEW.
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O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60622788 FROM: CRAN PAGE 4

CUST NUMBER: 1203820	NET WGT:	75.170	REQ. DATE: 01/12/17	CONFIRMED
SOLD TO:		SHIP TO:		
DART AEROSPACE LTD		DART AEROSPACE LTD		
1270 ABERDEEN ST		1270 ABERDEEN ST		
HAWKESBURY ON		HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7	
SALESPERSON:	DONNA SMALLEY	SHIP BY:	01/06/17	
TERMS:	NET 30 DAYS	27 ENGLEHARD DRIVE		
F.O.B.:	SHIPPING POINT	MONROE TWP	NJ 08831	
CUST ORD NO.:	PO34793			
VIA:	COMMON CARRIER			
FREIGHT:	PREPAID			
RELEASE NO.:				
RECEIVING PHONE:				

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material".

Authorized Test Report Clerk Conn McAnhe Date: 1/05/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.
<http://www.twmetals.com/invoice-terms.html>

PUFA™

Producer of Premium Stainless Steel Seamless Tubes

MILL TEST REPORT

Purchaser.: TW METALS-Cranbury			Certificate No.: 2016-8-67						
Contract No.: TWM P.O.No.: M49348005			Date of Issue.: 2016.8.10						
Commodity: Stainless Steel Seamless Tubes			Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW						
Process: Cold Drawn			Delivery Condition: OD Polished to 240 Grit						
Steel Grade	Heat Number	Lot Number	Dimensions			Quantity			
						Pieces	Feet		
TP304/TP304L	YX1511-521	7-64	1/2"x0.035"x20"			500	10,000		
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.018	1.25	0.029	0.001	0.39	18.40	8.05	-	-
Product Analysis	0.020	1.22	0.032	0.002	0.38	18.38	8.43	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	61/62		98,000/99,000			44,000/45,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

DAS
14
9-89

17/01/12



By:

James Shi

James Shi / Manager
Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China



PUFA™

Producer of Premium Stainless Steel Seamless Tubes

MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream			Certificate No.: 15-11-181						
Contract No.: TWM P.O.No.: M49339077			Date of Issue.: 2015.11.7						
Commodity: Stainless Steel Seamless Tubes			Specifications: ASTM A213-15/ASME SA213-13/ASTM A269-14e1 EAW						
Process: Cold Drawn			Delivery Condition: OD Polished to 240 Grit						
Steel Grade	Heat Number	Lot Number	Dimensions			Quantity			
TP304/TP304L	YX1506-712	9-116	1/2" x 0.049" x 20'			Pieces	Feet		
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.013	0.65	0.032	0.002	0.32	18.28	8.05	-	-
Product Analysis	0.017	0.61	0.033	0.002	0.28	18.31	8.55	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")			Tensile Strength (PSI)			Yield Strength (PSI)		
				Rm			Rp / 0.2%		
Requirements	≥35			≥75,000			≥30,000		
Test Results	63/64			91,000/92,000			36,000/37,000		
Test Item	Reduction of Area Z (%)		Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test	
			HRB≤80	-	22%	e=0.09	-	-	
Requirements			76/78	-	Passed	Passed	-	OK	
Test Item	Eddy Current Test		Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection			
			ASTM E 426	-	ASTM A262 E	End Cut	Appearance		
Requirements			Passed	-	OK	OK	OK		

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

DAS
14
9-89

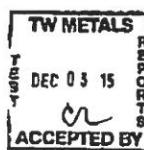
17/01/12

By:

James Shi / Manager
Quality Control Department

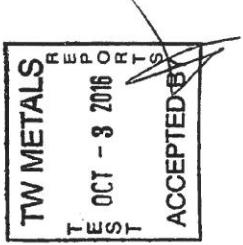
We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory
No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China



ABNAHMEPRÜFZEUGNIS EN 10204-3.1 INSPECTION CERTIFICATE EN 10204-3.1 CERTIFICATE DE RECEPTION EN 10204-3.1 EN 10204:2005-01		Dokument-Nr.: 41-961797/001/P Document No.: No. du document:	Prüf-Nr.: 41-961797/001/P Inspection No.: No. du certificat:	Blatt: 1 / 4 Page: Page:
Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland		Kunden-Bestell-Nr.: 46004384 TW M49353474 Purchase Order No.: No. de commande du client:	Hersteller: Wärmerohrwerk/Zieherei Manufacturer: (DIN EN ISO 9001, ISO TS-6949 CERTIFIED BY TUEV NORD CERT) Produkt: (IPED 2014/68/EU CERTIFIED BY TUEV NORD SYSTEMS)	
TW Metals The Aboretum, Suite 204 760 Constitution Drive EXTON PA 19341 USA		Benteler Auftrags-Nr.: 1625993 Benteler Order No.: No. de commande Benteler:	Herstellerzeichen: Manufacturer's brand: Marque du producteur:	
Versandanzeigen-Nr.: 4170922 Dispatch Note No.: No. d'avis d'expédition:		Stempel des Annahmebeauftragten: WA Stamp of the inspection representative: Pointçon du contrôleur:	Stahlerschmelzungsverfahren: ELEKTROSTAHL Steelmaking process: ELECTRIC FURNACE Procédé d'élaboration de l'acier: FOUR ELECTRIQUE	
Lieferbedingungen: Terms of delivery: Conditions de livraison:		AMS-T-6736B Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K		
Maße - Toleranzen: Dimensions-tolerances: Dimensions-tolerances:		AMS 2253E-83, Aircraft Type, Seamless, Cold Finished 14 / 7/01/13 9.99	DAS	
Stahlsorte: Steel grade: Nuance d'acier:		GRADE 4130	Condition N	
Liefenzustand: Delivery condition: État de livraison:				
Produktkennzeichnung: Product marking: Marquage du produit:		FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO. CD AQ S DIMENSIONS WA GERMANY		

AEZ = Abziehbeschriftung, Etching ink marking, Gravure à l'encre • FK = Farbmarkierung, color marking, marquage par couleur • FS = Farbschablonierung, paint stenciling, marquage par peinture • FSD = Farbstahldrucker, Color jet printer, Imprimante à jet d'encre de couleur • LK = Laserkonzeichnung, Laser marking, Marquage laser • PKE = Etikettentemperatur, die stamp, marquage sur étiquette • TS = Prägestempel, die stamp, marquage par pointonnage • TS = Timtemrakennzeichnung, Ink jet spray marking, Imprimante à jet d'encre .



ABNAHMEPRÜFZEUGNIS EN 10204-3.1				Dokument-Nr.: 41-961797/001/P				Prüf-Nr.: Inspection No.: No. du certificat:				Blatt: 2 / 4	
Pos.	Stück	Maße	Dimensions	Document No.:	Document No.:	Prüfdruck	Rohr-Nr.-Gruppe	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Blatt: 2 / 4	
Item	Number	Dimensions	Dimensions	Poste	Poste	Test pressure	Tube number group	Length total	Weight	Heat No.	Test pressure	Page: Page: Page:	
Poste	Nombre	Dimensions	Dimensions	feet	feet	No. de coulée	Série de no. des tubes	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Longueurs multiples	
Poste	Nombre	Dimensions	Dimensions	feet	feet	lbs	feet	feet	lbs	feet	lbs	feet	
0003	154	0.750"	O.D. *	0.049"	WT	3.688,32	1345	3.688,32	1345	WT	3.68618	20 FT - 24 FT	

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Pos.	Heat No.	Item	Item	Poste						
0003	598618	0,310	0,260	0,54	0,010	0,001	0,88	0,17	0,14	DAS
										14 9.89

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Pos.	Heat No.	Item	Item	Poste						
0003	598618	0,310	0,280	0,52	0,009	0,001	0,89	0,17	0,12	0,15

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:

The tubes are non destructive tested.

Les tubes ont passé un essai non destructif:

Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

Augensichtkontrolle:	PASSED	Materialverwechslungsprüfung:	PASSED	Maßkontrolle:	PASSED
Visual inspection:	PASSED	Material conformity test:	PASSED	Dimensions examination:	PASSED
Examen visuel:		Vérification de la nuance:		Vérification des dimensions:	

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probennahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'échantillonnage était réalisé aux longueurs multiples.

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Zugversuch längs bei RT; Vollprobe / Tensile test longitudinal at RT; Full section test specimen / Essai de traction longitudinale à TA, Epreuve à section complète

Dokument-Nr.: 41-961 797/001/P
 Document No.:
 No. du document:

Blatt: 3 / 4
 Page:
 Page:

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Probennahmung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limité élastique	Zugfestigkeit Tensile strength Résistance à la traction		Dehnung Elongation Allongement
					Rp 0,2 % ksi MIN 75	Rm ksi MIN 95	
000001	598618	598618	19,05 X	1,25	120	128	18,00
000002	598618	598618	19,05 X	1,25	120	128	18,00
000003	598618	598618	19,05 X	1,25	118	127	18,00
000004	598618	598618	19,05 X	1,25	120	128	18,00
000005	598618	598618	19,05 X	1,25	118	DAS128	18,00
					14	14	

Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0003

acc. to AMS-6360, partial decarburization outside max. 0.009 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.009 in, partial decarburization; partial decarb. out. max.: 0.229 mm; partial decarb. ins. max.: 0.229 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0003

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY. FAR TAA: 52.225-5 CAN COMPLY. No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K, see appendix page 1 of 1

Pos. / Item / Poste: 0003

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0003

Magnetic particle inspec.: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0003

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, On prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49 5254-81-0 Fax: +49 5254 13666

BENTELER 
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICATE DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-961797/001/P
Document No.:
No. du document:

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Page:
Page:

Paderborn Schloß Neuhaus, 19.09.2016, TEL.: 05254.81-201765 FAX: 05254.81-201752

Abnahmbeauftragter
Inspection representative

Controleur

i.A. THOMAS GOLLAN / GUT

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.

We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.

Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

**Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204-3.1 / appendix
Certificat de réception EN 10204-3.1 / appendice**

Dokument-Nr.
Document No.:
No. de document

Blatt: von 1 of 1 Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fin: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.		Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Tremperabilité (exigence min.) (ASTM-A 255)	Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301K)	Macrostruktur Macrostructure test Essai de macrostructure (ASTM-E 381)
		min. 5	J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34 S max. 0,25	max. S 2 max. R 1 max. C 2
598618	003	9	42	34 Inside 0,000 mm Outside 0,000 mm	0,029 0,024	S 2 R 1 C 2

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury

Paderborn Schloß Neuhaus, 21.09.2016
Tel.: (05254.81-201760 Fax: (05254.81-201752

**Abrahmebeauftragter
Inspection representative
Contrôleur**

Thomas Gollan

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland
TW Metals
The Aboretum, Suite 204
760 Constitution Drive
EXTON PA 19341
USA

Lieferbedingungen: Terms of delivery: Conditions de livraison:	AMS-T-6736B Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1	
Maße - Toleranzen: Dimensions-tolerances:	AMS 2253E-83, Aircraft Type, Seamless, Cold Finished	
Stahlsorte: Steel grade:	GRADE 4130, AMS 6360M and AMS 6371K DAS 14 176/13	
Nuance d'acier: Delivery condition: Etat de livraison:	8-89 N	
Produktkennzeichnung: Product marking:	FSD: BENTELER AMS-T-6736 B 1-MIL-T-6736 B 1-4130 N HEAT-NO. CD AQ S DIMENSIONS WA GERMANY	
Marqueage du produit:		

Blatt: 1 / 4 Page: Page:	Prüf-Nr.: Inspection No.: No. du certificat:
Hersteller: Warmföhrtwerk/Zählelei	Hersteller: IDN EN ISO 9001, ISO/TS 16949 CERTIFIED BY TUEV NORD CERT IPED 97/23/EC CERTIFIED BY TUEV NORD SYSTEMS
Manufacturer: Producent:	Manufacturer: Producent:
Herstellerzeichen: Manufacturer's brand:	Herstellerzeichen: Manufacturer's brand:
Marke du producteur:	Marke du producteur:
Stamp des Abnahmebeauftragten: WA Stamp of the inspection representative:	Stamp des Abnahmebeauftragten: WA Stamp of the inspection representative:
Stahlerschmelzungsverfahren: ELEKTROSTAHL Steelmaking process: ELECTRIC FURNACE	Stahlerschmelzungsverfahren: ELEKTROSTAHL Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE	Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

TW METALS R
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AZ = Ätzlinienbeschriftung, Etching ink marking, Gravure à l'acide . FK = Farbkennzeichnung, colour marking, marquage par couleur . FS = Farbschablonierung, paint stencil, marquage par peinture . FSD = Farbstahlindruck, Colour jet printer, marquage par jet d'encre de couleur . LK = Laser kennzeichnung, Laser marking, Marquage laser . PKE = Etikett kennzeichnung, tag marking, marquage par étiquette . PS = Prägtempeln, die stamp, marquage par poing/tempe . TS = Tintenstrahldruckzeichnung, ink jet spray marking, imprimante à jet d'encre de couleur .

ABNAHMEPRÜFZEUGNIS EN 10204-3.1				Dokument-Nr.: 41-832030/002/P				Prüf-Nr.: Inspection No.: No. du certificat:				Blatt: 2 / 4 Page: Page:	
Pos.	Stück	Maße	Dimensions	Document No.: No. du document:	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachhängen	Blatt: 2 / 4 Page: Page:		
Item	Number	Dimensions	Dimensions	Poste	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths	Blatt: 2 / 4 Page: Page:		
Poste	Nombre	Dimensions	Dimensions	feet	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples	Blatt: 2 / 4 Page: Page:		
0016	221	0.750" O.D. * 0.083" WT 17 FT - 24 FT	feet	4335,89	2531	587359							

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	Si	MN	P	S	CR	MO	NI	CU	TW METALS
Item	Heat No.										
Poste	No. de coulée										
0016	587359	0,320	0,260	0,56	0,006	0,001	0,88	0,17	0,13	0,13	E

Pos.	Schmelzen-Nr.	C	Si	MN	P	S	CR	MO	NI	CU	TW METALS
Item	Heat No.										
Poste	No. de coulée										
0016	587359	0,310	0,280	0,56	0,006	0,001	0,87	0,16	0,12	0,12	E

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft: The tubes are non destructive tested: Les tubes ont passé un essai non destructif:	ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections; ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections; Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)	PASSED	Materialverwechslungsprüfung: Material conformity test: Examen visuel:	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:
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Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probennahme erfolgte an Vielfachhängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Zugversuch längs Vollprobe Tensile test longitudinal Full section test specimen / Essai de traction longitudinale Eprouvette a section complete

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung	Einschnürung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation	Area reduction
Poste	No. de l'éprouvette	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement	Coefficient de striction
0016	000001	587359	19,05 X 2,10	101817	120381	20,00	A2"
0016	000002	587359	19,05 X 2,10	104427	120817	20,00	1. Formel
0016	000003	587359	19,05 X 2,10	105152	119801	20,00	1. Formule
0016	000004	587359	19,05 X 2,10	103267	121687	20,00	1. Formule
0016	000005	587359	19,05 X 2,10	104572	DAS 120962	20,00	1. Formule
Randentkohlung / Surface decarburization / Décarburization superficielle							
Pos. / Item / Poste: 0016 acc. MIL-T-6736B / AMS-T-6736B, decarburization outside max. 0.356 mm, decarburization outside + inside max. 0.46 mm							
Vermerk / Remark / Remarque							
Pos. / Item / Poste: 0016 Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M and AMS 6371K, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany; see appendix page 1 of 1							
Pos. / Item / Poste: 0016 Macroscopic examination: acc. to ASTM-E 381							
Pos. / Item / Poste: 0016 Magnetic particle inspec.: acc. to AMS 2301 G/2640, on prematerial							
Pos. / Item / Poste: 0016 Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, On prematerial							
Verkäufer(in) / Sales personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204388							

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0016

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Pos. / Item / Poste: 0016

YOUNG METALS

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Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.136666

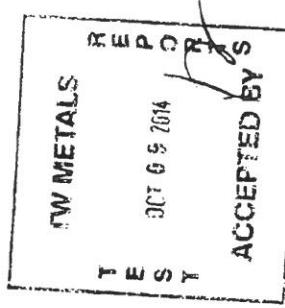
BENTELER ▼
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-832030/002/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

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Page:
Page:



Paderborn Schloß Neuhaus, 14.09.2014, TEL.: 05254.81-201767 FAX: 05254.81-201752

Abnahmebeauftragter
Inspection representative
Contrôleur

THOMAS GOLLAN / TEM
Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH
Residenzstraße 1
33104 Paderborn
Germany
Tel.: 49 5254 81-0 Fax: 49 5254 13666

BENTELER ▼

Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204-3.1 / appendix
Certificat de réception EN 10204-3.1 / appendix

Dokument-Nr.
Document No.:
No. de document

41-832030/002/P

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Page:
Page:

von
1 of
de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fin: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Tremperabilité (exigence min.) (ASTM-A 255)	Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301G / 2640J)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)
		min. 5	J(5/16") min. 35 HRC	F max. 0,34 S max. 0,25	max. S 2 max. R 1 max. C 2
587359	016	10	41	31 0,029 TW METALS T E S T JCT 0 9 774 ACCEPTED BY i.A. BENTELER Steel/Tube GmbH	S 2 R 1 C 2

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 14.09.2014
Tel.: (0)5254 81-201760 Fax: (0)5254 81-201752

Abnahmevertrags
Inspection representative
Contrôleur

Thomas Gollan



PLYMOUTH TUBE CO. USA

212 Industrial Park Road, Eupora, Mississippi 39744
Phone: (662) 258-2420 Fax: (662) 258-2075

PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

143275 - 1 / 3

SHIP TO

TW Metals
27 Englehard Drive
Monroe Township, NJ 08831
USA

WORK ORDER A43275
HEAT NUMBER MM16101444
MELT SOURCE Nucor Steel - USA Melt/Mfg

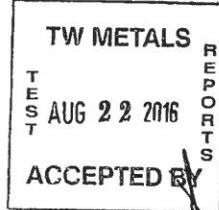


CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE
M 49354259	33364	2,697.0 ft	00087888	01	08/15/2016

PART DESCRIPTION H10001200J002
OD: 1.0000" Max: 1.0050" Min: 0.9950"
Wall: 0.1200" Max: 0.1320" Min: 0.1080"
Length: 20.00' / 24.00' Lgth Tol: RANDOM CUT LENGTH
Lgth: 20.00' / 24.00'
Spec: Mil-T 6736B Seamless Aircraft
Grade: 4130
Finish: Cond N

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9-89

17/01/13



CERTIFICATION REQUIREMENTS

This material was Eddy Current tested and conforms to the requirements of ASTM A-450.

The Grain size is determined and reported by the raw material supplier in accordance to ASTM E-112.

This raw material was magnetic particle inspected by the raw material supplier in accordance to AMS 2640J and/or ASTM E-1444, and rated as Frequency, and Severity to AMS 2301, latest revision.

Yield is determined by using the 0.2% offset method.

Chemical Analysis

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	Sn
.31	.53	.008	.005	.23	.17	.13	1.04	.218	.0024	.002	.023	.007

Physical Properties

Freq.	Severity	Grain Size
.000	.000	6

Mechanical Properties

TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV
Tensile	.Psi	3	107900	105700	107133	1242
Yield	.Psi	3	100500	92100	97267	4521
Elongation	%	3	21	20	21	1
TEST	RESULT					
Decarb/OD	Pass					
Total ID/OD decarb	Pass					
TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV
Rockwell C	Rc	3	22	21	21	1
Rockwell B	Rb		—	—	—	—

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Eupora in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube. Product free from hazardous materials.

George F. Young Jr.

Quality Assurance



PLYMOUTH TUBE CO. USA

212 Industrial Park Road, Eupora, Mississippi 39744
Phone: (662) 258-2420 Fax: (662) 258-2075

PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

143275 - 1 / 3

WORK ORDER A43275
HEAT NUMBER MM16101444

MELT SOURCE Nucor Steel - USA Melt/Mfg

SHIP TO

TW Metals
27 Englehard Drive
Monroe Township, NJ 08831
USA

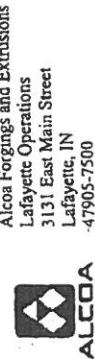


CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE					
M 49354259	33364	2,697.0 ft	00087888	01	08/15/2016					
PART DESCRIPTION	H10001200J002									
Additional Specification(s)										
AMS-T6736 B, AMS 6360M										
<p>This test report data is for the heat Chemistry Stated above. Drawn in the USA</p> <p style="text-align: center;">-End of Certification-</p>										

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Eupora in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube. Product free from hazardous materials.

George F. Young
Quality Assurance

Certified Inspection Report



Alcoa Forgings and Extrusions
Lafayette Operations
3131 East Main Street
Lafayette, IN
47905-7500

Alcoa, Inc.

Invoice To Customer

TW METALS INC
THE ABBREUITION SUITE 204
760 CONSTITUTION DR
EXTON, PA - 19341

Ship To Customer

TW METALS INC
235 W. TUBEWAY
CAROL STREAM, IL - 60188

Sales Order Number 100333483	Line No. 4.1	Customer PO 49295465-001 / ITEM 43284	Cert Number AEP1652838	Page 1/3
				Cert Print Date 09-AUG-13

Quantity Shipped 776	Date Shipped 08-AUG-13	Item Description Drawn Tube OD X WALL 1.000 OD X 0.065 WALL 144 IN EN 6.061 / T6 WF 0.225 Marking-CONTR-Oiling N AMS4082 REV P AMS-WW-T-70006 REV B ASTM B210 REV 12 CP49-74.2-005 REV 7 WW-T-70016 REV F, AM2, NOT 1	
Line B/L 2099248	Item No. G03272119	Delivery ID 8598850	Item No. Rev Customer Part No

Notes

COMPOSITION NOTE: The values for 'Others Each' and 'Others Total' have met the limits as shown on this certified inspection report. Remainder is Aluminum.

Legal Statement		Signature And Title	
<p>We hereby certify that, unless otherwise indicated, the material covered by this report has been manufactured, inspected, and tested in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description and that samples representative of the material met the composition and had the mechanical properties shown on the face of this certification. Also, note that mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product. This certification is not to be reproduced in partial form without prior written approval of our Quality Assurance Dept.</p>		 Melissa Griffith Quality Control Manager	

Quantities per Lot / Packages

Package Number	Lot Number	Quantity	UOM	Gross	Net	DAS
G17-PKG608442	178100951	95	PCS	278	257	14 9-89
G17-PKG608443	178100951	95	PCS	278	257	
G17-PKG608446	178100951	97	PCS	284	262	

Composition Limits

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6161 Min	0.40	—	0.15	—	0.8	0.04	—	—
6161 Max	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15
Alloy	Others Each	—	—	Others Total	—	—	—	—
6161 Min	—	—	—	—	—	—	—	—
6161 Max	0.05	—	—	0.15	—	—	—	—

Composition Results

Heat / Cast / Lot Number	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6890-L23	0.15	0.22	0.26	0.05	0.9	0.05	0.05	0.02

KG

Certified Inspection Report

Alcoa Forgings and Extrusions
Lafayette Operations
3131 East Main Street
Lafayette, IN
47905-7500



Alcoa Forgings and Extrusions		Customer PO		Cert Number		Page	
				AEP1652838		2/3	
Sales Order Number		Line	No.	Cert Print Date			
1000333483		4.1		49295465-001 / ITEM 43284	09-AUG-13	09-AUG-13	

Heat / Cast / Lot Number	Others Each
6890-L23	—

Mechanical Property - Test Results

Test Temper	Lot Number	Piece / Test ID	Test Type	UTS - L	TYS - L	EL 4D-Long
			UOM	KSI	KSI	PCT
T6	17800951	1-F		47.0	42.6	21.2

Other - Test Limits

Test Temper	Lot Number	SPEC LIMITS	Test Type	Dimensional	
			UOM	Min	Max
T6				P	—

Other - Test Results

Test Temper	Lot Number	Results	Test Type	Dimensional	
			UOM	# of Tests	Results
T6	17800951				P

TW METALS	REPORT
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T	ACCEPTED BY

K6

Certified Inspection Report

Alcoa Forgings and Extrusions
Lafayette Operations
3131 East Main Street
Lafayette, IN
47905-7500



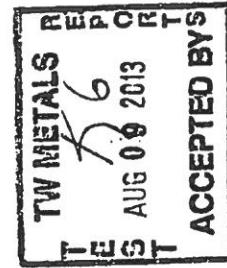
Cert Notes

Made in USA
The test report shall not be reproduced except in full without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate.
The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Sales Order Number	Line	Customer PO
1000333483	No. 4.1	49295465-001 / ITEM 43284

Cert Number	Page
AEP1652838	3/3

Cert Print Date
09-AUG-13



KG



Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
5205 KAISER DRIVE
KALAMAZOO, MI 49048

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:			
M49321087-1		43284		Seamless Tube/Pipe			
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:		KAISER LOT NUMBER:	ALLOY:	TEMPER:	
672356	001	11/11/2014		F00175873	6061	T6	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:		DIAM/DAF/THKNS:	WIDTH:	LENGTH:	
552.000-LB	205.000 PCS	610343				12.000 FT	
SHIP TO:	SOLD TO:						
TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA	TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA						

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CONDUCT.	BEND
F00175873	0001	1	45.9	41.3	14.5	N/A	N/A	N/A
F00175873	0002	1	45.7	41.9	14.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D73667	.59	.30	.28	.06	.95	.07	.05	.02	.00	.00	.00	.01	.02
D73666	.63	.33	.26	.06	1.01	.08	.07	.02	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 1.000"; Wall: 0.065"; Round @
AMS-4082P AMS-WW-T-700/6B ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS-4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.

Miscellaneous Notes

MANUFACTURED IN USA (CHANDLER, AZ) MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).



KAISER

ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
5205 KAISER DRIVE
KALAMAZOO, MI 49048

*Best in
Class*

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Aimee L. Macnowski, Quality & Technology Manager

Aimee L. Macnowski

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR.50010.049
 DATE: 17/01/14

PO / BATCH NO: 34793/136569

MATERIAL CERT REC'D: Y
 QUANTITY RECEIVED: 80
 QUANTITY INSPECTED: 80
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .049W
 THICKNESS RECEIVED: .045W
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL	Y <u>N</u>	304
CORRECT THICKNESS	Y <u>N</u>	.045W
PHOTO REQUIRED	Y <u>N</u>	
CORRECT MATERIAL	Y <u>N</u>	ASTM A213 ASTM A269
CORRECT REF # TO LINK CERT	Y <u>N</u>	HEAT # 4X1506712
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	M304TR.50010.049
CORRECT M# ON THE MATERIAL	Y <u>N</u>	M136569
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	DAS	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>14</u> <u>9.80</u>		SIGNED OFF BY: _____
DATE: <u>17/01/12</u>		DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: 916061T6T1.000W.065
 DATE: 17/01/12

PO / BATCH NO.: 34793/136569

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24
 QUANTITY INSPECTED: 24
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .065
 THICKNESS RECEIVED: .060
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/>	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/>	
CORRECT MATERIAL	Y <input checked="" type="checkbox"/>	<u>6061T6</u>
CORRECT THICKNESS	Y <input checked="" type="checkbox"/>	<u>.060</u>
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT MATERIAL	Y <input checked="" type="checkbox"/>	<u>AMS QQ-A-200/8</u>
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/>	<u>HEAT # 17800951</u>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/>	<u>916061T6T1.000W.065</u>
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/>	<u>M136569</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	DAS	ENGINEERING SIGNOFF (if required)	
INSPECTED BY:	14	SIGNED OFF BY: _____	
DATE:	17/01/12	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.500W.035
 DATE: 17/01/12

PO / BATCH NO.: 34793/136569

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 20
 QUANTITY INSPECTED: 20
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .035
 THICKNESS RECEIVED: .030
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL	Y	N	304
CORRECT THICKNESS	Y	N	.030
PHOTO REQUIRED	Y	N	
CORRECT MATERIAL	Y	N	ASTM A213
CORRECT REF # TO LINK CERT	Y	N	ASTM A269
CORRECT MATERIAL IDENTIFICATION	Y	N	HEAT # 4X1571521
CORRECT M# ON THE MATERIAL	Y	N	M304TR0.500W.035
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	M136569
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>14</u> <u>0.98</u>		SIGNED OFF BY: _____
DATE: <u>17/01/12</u>		DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT0.750W.049
 DATE: 17/01/13

PO / BATCH NO: 34793/136569

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24
 QUANTITY INSPECTED: 24
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .049
 THICKNESS RECEIVED: .045
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	<u>Y</u> N	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u> N	
CORRECT MATERIAL	<u>Y</u> N	Y130
CORRECT THICKNESS	<u>Y</u> N	.045
PHOTO REQUIRED	Y <u>N</u>	
CORRECT MATERIAL	<u>Y</u> N	MIL-T-6936
CORRECT REF # TO LINK CERT	<u>Y</u> N	HEAT# 598618
CORRECT MATERIAL IDENTIFICATION	<u>Y</u> N	M4130NT0.750W.049
CORRECT M# ON THE MATERIAL	<u>Y</u> N	M136569
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

QC 18 INSPECTION	14	ENGINEERING SIGNOFF (if required)
INSPECTED BY:	<u>9-89</u>	SIGNED OFF BY: _____
DATE:	<u>17/01/13</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NTO.750W.083
 DATE: 17/01/13

PO / BATCH NO: 34793/136569

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 2019.5
 QUANTITY INSPECTED: 2019.5
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .083
 THICKNESS RECEIVED: .083
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL	Y <input checked="" type="checkbox"/> N	
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>14</u> <u>9.89</u>	SIGNED OFF BY: _____
DATE: <u>17/01/13</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT1.000W.120
 DATE: 17/01/13

PO / BATCH NO: 34793/136569

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24
 QUANTITY INSPECTED: 24
 QUANTITY REJECTED: _____

THICKNESS ORDERED: .120
 THICKNESS RECEIVED: .117
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/>	N
CORROSION	Y <input checked="" type="checkbox"/>	N
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/>	N
CORRECT MATERIAL	Y <input checked="" type="checkbox"/>	4130
CORRECT THICKNESS	Y <input checked="" type="checkbox"/>	.117
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT MATERIAL	Y <input checked="" type="checkbox"/>	MIL-T-6731
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/>	HEAT# MP110101444
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/>	M4130NT1.000W.120
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/>	136569
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	14	ENGINEERING SIGNOFF (if required)
INSPECTED BY:	9-89	SIGNED OFF BY: _____
DATE:	17/01/13	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34793**

Purchase Order Date 1/4/2017

PO Print Date 1/4/2017

Page Number 1 of 4

Order From :
TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

JAN 02 2017



Contact Name		Buyer	Chantal Lavoie
Vendor Phone	585 768 5600	Customer POID	
Ship To Contact		Customer Tax #	10127-2607
Ship To Phone		Terms	Net 30
Ship Via:	YRC COLLECT	Currency	USD
Ship Acct:		FOB	FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M304TR0.500W.035	304 RD Tube .500 x .035W	1/12/2017 Yes 1/12/2017	24.00 f	<i>20ft</i>	\$1.50	\$36.00
	MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269						
2	M304TR0.500W.049	304 RD Tube .500 x .049W	1/12/2017 Yes 1/12/2017	84.00 f	<i>80ft</i>	\$2.80	\$235.20
	MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269						
	<i>SP H-O-H</i>						
	Line Total: \$36.00						
	Line Total: \$235.20						

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34793**

Purchase Order Date 1/4/2017

PO Print Date 1/4/2017

Page Number 2 of 4

Order From : VU-TWM001
TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600
Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

3 M4130NT0.750W.049 ✓ 4130 RD Tube .750 ✓ 1/12/2017 20.00 \$6.00 \$120.00

f Rec'd 23-917

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

4 M4130NT0.750W.083 ✓ 4130 RD Tube .750 ✓ 1/12/2017 20.00 \$3.85 \$77.00

f Rec'd 19.583

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

8/17-0-11

Line Total: \$77.00

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34793**

Purchase Order Date 1/4/2017
PO Print Date 1/4/2017

Page Number 3 of 4

Order From :
TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

5 M4130NT1.000W.120 4130 RD Tube 1.00 x .120wall 1/12/2017 20.00 \$2.75 \$55.00

f Rec'd
1/12/2017

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

6 M6061T6T1.000W065 6061T6 RD TUBE 1.00 x .065w 1/12/2017 20.00 \$2.96 \$59.20

f Rec'd
1/12/2017

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

Line Total: \$55.00

\$59.20

Line Total: \$59.20

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34793**

Purchase Order Date 1/4/2017
PO Print Date 1/4/2017

Page Number 4 of 4

Order From : VU-TWM001
TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

7	71401-45	PROCUREMENT QUALITY CLAUSES	1/12/2017	1.00	\$0.00	\$0.00
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Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

No
1/12/2017

SOFT-a-11

Line Total: \$0.00

PO Total: \$582.40

U

CL

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.